

2.15 Roadside Restoration

2.15.1 General

The Design-Builder shall perform all Work necessary to complete the roadside restoration and mitigation design and construction (planting and architectural treatments) for the Project. Elements of Work shall include, at a minimum, restoration of roadside areas, mitigation, restoration of temporary Sensitive Area impacts, and architectural elements.

2.15.2 Mandatory Standards

The following is a list of Mandatory Standards that shall be followed for all design and construction related to this Section as referenced in TR Section 2.2, *Mandatory Standards*.

1. Special Provisions (Appendix 4)
2. Standard Specifications M 41-10 (Appendix 4)
3. WSDOT *Design Manual* M 22-01 (Appendix 4)
4. WSDOT *Standard Plans* M 21-01 (Appendix 4)
5. WSDOT *Roadside Policy Manual* M 3110 (Appendix 4)
6. WSDOT *Roadside Manual* M 25-30 (Appendix 4)
7. WSDOT *Traffic Manual* M 51-02 (Appendix 4)
8. WSDOT *Local Agency Guidelines* M 36-63 (Appendix 4)
9. *Washington State Bicycle Facilities and Pedestrian Walkways Plan*, 2008-2027
10. WSDOT *Integrated Roadside Vegetation Management Plans* (Appendix 4)
11. *FHWA Flexibility in Highway Design* (Appendix 4)
12. WSDOT *Highway Runoff Manual* M 31-16 (Appendix 4)
13. WSDOT *Standard Concrete Finishes for Bridge & Structure Construction in Highway Projects* (Appendix 4)
14. *Qualified Products List* (QPL)
<https://www.wsdot.wa.gov/Business/MaterialsLab/QPL.htm>
15. WSDOT *Understanding Flexibility in Transportation Design – Washington* (Appendix 4)

2.15.3 Personnel Requirements

The architectural treatments, roadside restoration, and mitigation design shall be prepared by or under the direct supervision of the Licensed Landscape Architect.

Urban design elements, soil, and planting design shall be prepared by, or under the direct supervision of the Licensed Landscape Architect. Refer to the WSDOT *Highway Runoff Manual* for additional design information for stormwater facilities. Preparation by the Project Landscape Architect shall include the configuration, grading, planting, construction, and plant establishment.

The Licensed Landscape Architect shall have a minimum 5 years of experience with wetland and stream mitigation and highway related roadside restoration.

2.15.4 Design Criteria

2.15.4.1 General

The Design-Builder shall develop the final Design Documents for the Project in accordance with the design criteria described in this Section, the LAS and wall and structural finishes identified in preliminary bridge and buried structures plans developed during the Phase 1 Services Period, and the Mandatory Standards. The Context Sensitive Solutions (as referenced in WSDOT *Understanding Flexibility in Transportation Design – Washington*) treatments used on the Project shall not decrease the structural integrity of Project elements. If any of the design criteria are not achievable, the Design-Builder shall submit clear documentation to the WSDOT Engineer showing what cannot be achieved and a proposed alternative for Review and Comment.

Prior to the purchase, use, or manufacture of form liners, the Design-Builder shall provide the WSDOT Engineer with one form liner and three 5 by 5-foot concrete samples of each retaining wall finish for Review and Comment and all comments shall be resolved.

The concrete shall be sealed with pigmented sealer in accordance with the Standard Specifications. All concrete on the Project shall be sealed with the same color of pigmented sealer as determined during the Phase 1 Services Period.

2.15.4.2 Retaining Walls

The Design-Builder shall use Context Sensitive Design (as referenced in WSDOT *Understanding Flexibility in Transportation Design – Washington*) to determine the appropriate size, appearance, and layout of walls needed. All walls facing toward the roadway shall have the same exterior wall texture and pattern regardless of the wall type to achieve a consistent appearance throughout the corridor. All retaining walls shall be in accordance with the requirements of TR Section 2.13, *Bridges and Structures* in accordance with the WSDOT *Fish Passage Aesthetics Guidance* document, and according to the requirements of Section 2.6, *Geotechnical*.

The Design-Builder shall, while retaining existing native vegetation to the maximum extent feasible, minimize the visual dominance of the wall by implementing one or both of the following:

- Using wall profiles and alignments that blend with the natural terrain by stepping the tops of walls.
- Using grading to reduce the need for walls, except in Sensitive Areas***, provided soil structure allows for vegetation to give the necessary stability for slopes without rock or other hard surfaces***.

2.15.4.2.1 Retaining Walls Facing Away from the Roadway

The Design-Builder may select any wall type that meets the requirements of TR Section 2.6, *Geotechnical*.

If the Design-Builder uses concrete for a retaining wall of any type, the concrete shall be in accordance with the *****to be determined during the Phase 1 Services Period*****.

For walls that have visibility from both sides, such as noise walls, patterns may be different on each side of the wall to meet the requirements of this Section.

2.15.4.2.2 Retaining Walls Visible from the Roadway

For retaining walls visible from the roadway, the following wall types will not be allowed unless approved by the WSDOT Engineer:

- Gabion
- Gravity block
- Modular block
- Crib walls
- Ecology block
- Shotcrete

Concrete walls or concrete fascia panels are required for all walls facing the highway for visual quality. The Design-Builder shall use a form liner finish as specified in accordance with the *****WSDOT Fish Passage Aesthetic Guidance***** for all wall types unless otherwise specified.

The concrete shall be sealed with *****Mount Saint Helens gray***** pigmented sealer in accordance with the Standard Specifications.

2.15.4.3 Noise Wall Aesthetics

This Section is intentionally omitted.

2.15.4.4 Bridge Aesthetics

This Section is intentionally omitted.

2.15.4.4.1 Abutment Wall Aesthetics

The Design-Builder shall incorporate the aesthetic treatment for the abutment wall design in accordance with the *****to be determined during the**

1 Phase 1 Services Period document for the Project. Abutment wall types and
2 aesthetic treatments shall be submitted as part of each abutment
3 submittal.

4 **[Note: This paragraph will be updated as part of the Project Implementation**
5 **Amendment.]**

6 **2.15.4.5 Barrier Aesthetics**

7 This Section is intentionally omitted

8 **2.15.4.6 Sign Structures and Toll Gantries Aesthetics**

9 This Section is intentionally omitted.

10 **2.15.4.7 Right of Way and Fall Protection Fencing Aesthetics**

11 Aesthetic treatment of ROW and fall protection fencing is shown in the ***to be
12 determined during the Phase 1 Services Period document. The Design-Builder
13 shall develop the ROW and fall protection fencing plans in accordance with the
14 following: **[Note: This paragraph will be updated as part of the Project GMP**
15 **Bundle Amendment.]**

- 16 • In locations where pedestrian gates are required, the Design-Builder shall
17 provide lock or entry mechanisms consistent with WSDOT requirements
18 and Standard Plan L-30.10.
- 19 • All new fencing shall be consistent in color. Refer to the ***to be
20 determined during the Phase 1 Services Period***document for the
21 selected color, type, and details **[Note: This paragraph will be updated**
22 **as part of the Project GMP Bundle Amendment.]**
- 23 • Refer to the WSDOT *Design Manual* and TR Section 2.13, *Bridges and*
24 *Structures*, for additional fall protection fencing requirements

25 **2.15.4.8 Color Aesthetics**

26 Color shall be applied in accordance with the Standard Specifications to all
27 surfaces including, at a minimum, the following:

- 28 • Bridge structures including all sides of every girder, all sides of the
29 superstructure, all sides of every cap beam, and all above-grade portions of
30 every column
- 31 • Retaining and abutment walls
- 32 • Fencing
- 33 • Barriers
- 34 • Railings
- 35 • Downspout drains and scuppers on bridges
- 36 • All metal work

2.15.4.9 Lighting

2.15.4.10 Roadside and Sensitive Area Restoration

The Design-Builder shall design and construct roadside restoration and temporary wetland and temporary buffer impact areas in accordance with this Section and the Mandatory Standards.

2.15.4.10.1 Vegetation Protection

The Design-Builder shall identify and develop Vegetation Protection Plans specifying all measures to preserve and protect existing native plant communities and existing forested areas. No soil or vegetation disturbance, including, at a minimum, vegetation, and landscape material removal, staging of equipment and materials, machine access, or soil compaction shall occur within vegetation protection areas, except where weed control, vegetation restoration, or vegetation enhancement are specified (either individually or in combination) as the restoration, regardless of construction impacts. If the Design-Builder determines that the Project goals cannot be met without impact to vegetation protection areas, the Design-Builder shall provide written justification to the WSDOT Engineer.

The justification shall document all proposed impacts to vegetation protection areas (size and species of trees and square footage for shrubs) that would be impacted and identify and describe avoidance measures that have been evaluated. The Design-Builder shall clearly tag all affected trees 4 inches Diameter at Breast Height (DBH) and greater that are anticipated to be removed or affected by construction activities for review in the field. Each affected tree shall be tagged with a weatherproof form of identification. Once the trees are tagged, the Design-Builder shall notify the WSDOT Engineer to arrange for WSDOT field review and concurrence.

2.15.4.10.2 Vegetation Removal Documentation

The Design-Builder shall quantify and document all vegetation removal, vegetation disturbance, and soil compaction within the Project limits regardless of the location. Disturbance shall include, at a minimum:

- Critical Root Zone: changes within the critical root zone equal to one and a half feet per inch of tree diameter at breast height, including excavation, trenching, cutting roots, placing fill materials, soil compaction, and changes in surface water and groundwater
- Vegetation modification: changes to branches, foliage, and trunks including, at a minimum, abrasion, breakage, or scarring

The following categories of vegetation removal and disturbance shall be measured and documented as follows:

- For areas of shrubs and trees less than 4 inches DBH, provide the location and the square footage area of removed shrubs and trees.

- For trees greater than 4 inches DBH, document the location, quantity, DBH size, and species. Documentation is not required for trees between a 4 and 30-inch DBH in environmental Sensitive Areas as defined by Section 2.8, Environmental.
- Document the location, quantity, size, and species of trees greater than a 30-inch DBH in environmental Sensitive Areas as defined by Section 2.8, Environmental.
- Document the location, quantity, and DBH size of red alder (*Alnus rubra*) and black cottonwood (*Populus balsamifera trichocarpa*) only when greater than a 30-inch DBH.
- The Design-Builder shall document all areas by location and square footage where Project activities may compact soils. Compacted soils documentation shall include the following at a minimum:
 - Equipment and materials staging locations
 - Lay-down areas
 - Access and construction routes

2.15.4.10.3 Vegetation Replacement Criteria

The Design-Builder shall restore all construction impacts to vegetation and soils. Restoration shall also include compensation for tree and vegetation loss based on the following criteria:

For trees less than 4 inches DBH and all shrubs, removed vegetation shall be replaced at a 1:1 ratio by area. A minimum plant size of a 1-gallon container shall be used for each plant replaced. The Project shall replace an equivalent area of vegetation to that removed in this category as described in the Vegetation Removal Documentation above.

For trees between 4 and 30 inches DBH, removed vegetation shall be replaced with one 1-gallon container replacement plant for each 1 inch of trunk diameter. The total quantity of replacement trees under 30 inches DBH may be reduced by half if 2-gallon or larger container size plants are used.

Roadside Restoration and Environmental Mitigation

For Roadside Policy requirements, replacement trees cannot be counted in environmentally Sensitive Areas, except where trees greater than a 30-inch DBH are removed in environmental Sensitive Areas. Any replacement trees in environmentally Sensitive Areas that are to be removed shall meet the requirements of the Roadside Policy Manual (see Tree Replacement Flow Chart).

2.15.4.10.4 Planting Design Requirements

- Planting and soil restoration plans for temporary wetland and temporary buffer impact areas shall be developed to correct soil compaction and vegetation removal within Sensitive Areas. Temporary wetland and temporary buffer impact areas shall be restored in place.

- The Licensed Landscape Architect shall develop soil restoration and roadside restoration plans to restore impacted areas as inventoried by the vegetation removal documentation. The Planting Plan footprint shall be in accordance with the vegetation replacement criteria in this Section and the TR Section 2.15.02, *Mandatory Standards*. Planting areas shall extend beyond disturbed areas to the face of noise wall unless desirable vegetation is pervasive in those areas.
- Planting areas for roadside restoration and temporary impacts shall be located and designed based on Roadside Zones (Zones 1-3) as defined in the WSDOT *Roadside Policy Manual*.
- The Design-Builder shall ensure that the total acreage of its proposed roadside restoration and temporary impacts is equal to or greater than the total acreage required to meet the vegetation replacement criteria.
- Alder (*Alnus* sp.), Cottonwood (*Populus* sp.), and Bigleaf Maple (*Acer macrophyllum*) shall not be used.
- The Design-Builder shall develop Roadside Restoration Planting Plans, which provide screening of the highway as viewed from residences. The Design-Builder shall incorporate vine plantings on noise walls and retaining walls behind highway barriers. Vines shall cover a minimum of 20 percent of the wall areas at maturity.
- The Design-Builder shall develop Roadside Restoration Plans for all pedestrian connection points and sidewalks constructed as part of the Project. Vegetation within 3 feet of sidewalks shall not exceed 3 feet in height at maturity. Crime Prevention Through Environmental Design principles shall guide design of pedestrian area vegetation.
- For areas disturbed within City ROW, all topsoil, plantings, and irrigation shall be restored to the original condition or shall be designed in accordance with the City's landscape standards. Plant selection and species shall be coordinated and approved by the City.
- All new vegetation within the City shall be irrigated and metered. Irrigation that is to be maintained by the City shall be in accordance with the City's standards. If existing irrigation is disrupted during construction, temporary irrigation shall be provided to existing landscape areas and the existing irrigation system shall be reconnected for continuous irrigation.
- All planting areas shall be designed to account for safety clear zones and appropriate sight distances as required in this Section. If roadside restoration planting areas are constrained by clear zone, sight distance, location of signage, Closed-Circuit Television (CCTV), roadway widening, or other factors; the Design-Builder shall develop planting areas outside the disturbed areas. All alternate planting areas shall be coordinated and approved by the WSDOT Engineer. Planting areas may be within the Impact Area Line but shall be outside of environmental Sensitive Areas unless permitted.

- The Design-Builder shall develop Roadside Restoration Planting Plans on both sides and ends of noise walls and retaining walls when concrete barrier is not adjacent to walls. Vines shall be planted on all walls at 3 feet on center spacing where a minimum of 2 feet of planting area exists. Vines shall also be planted on the community side of the wall, where walls are adjacent to and visible from residential areas. Vine species shall be approved by the WSDOT Engineer.
- The Design-Builder shall select plant species and root condition based on soil conditions, slopes, solar exposure, wetland indicator status, growth habits, sight lines, location of lighting, signage, and CCTV cameras, and maintenance and watering requirements. Plant material selection, spacing, and configurations shall be in accordance with this Section and Plant Materials List included in the ***60% Design Documents ***.
- The Design-Builder shall incorporate pollinator friendly species where appropriate, including in seeded areas, and use best practices in creating pollinator habitat.
- Roadside restoration and temporary wetland and temporary buffer impact areas shall be planted with shrub species at 3 or 4 feet on center spacing and trees at 8 feet on center spacing; willow stakes at 2 feet on center spacing.
- The Design-Builder shall stabilize all slopes utilizing bioengineering, plant material, or seeding in combination with biodegradable materials such as compost, mulch, or erosion control materials.
- Vegetation Protection Plans, soil restoration decompaction and staking details shall be included in the Plans. All conifers shall be staked.

If turf reinforcement mat is installed, the Design-Builder shall spread topsoil over the turf reinforcement mat. Sub-soil preparation and incorporation is not required for topsoil. The topsoil shall fill the reinforced mat apertures to the full mat thickness. After settlement and watering of topsoil, the reinforced mat shall be covered with a minimum of 18 inches of topsoil. The slope shall be hydroseeded with erosion control grasses with pollinator forbs in accordance with Sections 8-01 and 9-14 of the Standard Specifications. Topsoil and seeded area soil preparation shall meet the requirements of this Section.

2.15.4.11 Mitigation

The Design-Builder shall develop and construct environmental mitigation for permanent and temporary impacts to environmentally Sensitive Areas in accordance with this Section and TR Section 2.2, *Mandatory Standards*. Design and construction shall include, at a minimum, site access for construction Landscaping Warranties Work, stream bypass, water management, anchoring for buoyancy, noxious weed control, erosion control, soil preparation, planting, and stream improvement/enhancement elements for all Sensitive Area mitigation and restoration areas in accordance with TR Sections 2.8, *Environmental*, 2.14, *Hydraulics*, and 2.30, *Fish Passage*.

1 The Design-Builder shall identify and develop Vegetation Protection Plans to
2 protect Sensitive Areas in accordance with the vegetation protection requirements
3 of this Section.

4 Temporarily impacted wetland, stream, jurisdictional feature, and buffer areas
5 shall be restored in place. The Design-Builder shall ensure a diverse native plant
6 community. Planting areas shall be designed with site-appropriate plant mixes and
7 all plant species selection shall be based on the correlation between the hydrologic
8 conditions, the wetland indicator status of the plant(s), the restrictions of
9 urban/engineered features, and according to the requirements in the environmental
10 permits. The Design-Builder shall develop an environmental Mitigation Planting
11 Plan to accommodate impacts to environmental Sensitive Areas within the Project
12 limits.

13 All noxious weeds removed from Sensitive Areas shall be replaced with native
14 plant species. Species shall be selected based on the correlation between the
15 hydrologic conditions, the wetland indicator status of the plant(s), and the
16 restrictions of urban/engineered features.

17 The Design-Builder shall remove and control all noxious weed species as defined
18 in Section 8-02.3(3) of the Standard Specifications, as well as those designated
19 below:

20 ***To be determined during the Phase 1 Services Period***

21 **2.15.4.12 Grading**

22 Grading shall reflect the natural forms and character of the surrounding area. In
23 Sensitive Areas, grades shall match existing grades to within 1 inch.

24 Slopes shall be finished by rounding in accordance with Standard Plan A-20.10.

25 The Design-Builder shall design side slopes and embankments to minimize the
26 use of barriers, metal guardrails, and fall restraint measures. Constructed or
27 graded slopes in all planting areas shall not be steeper than 2H:1V (Horizontal to
28 Vertical).

29 **2.15.4.13 Planting and Seeding Preparation**

30 The Design-Builder shall decompact all seeding, planting, and documented
31 compacted soil areas prior to soil amendment incorporation or application of
32 compost or topsoil. Decompaction shall be performed to a depth of 12 inches in
33 seeded areas and 18 inches in planting areas.

34 All planting areas shall incorporate 4 inches depth of compost or install 12 inches
35 of topsoil to prepare planting areas. Turf reinforced mat installation areas shall
36 receive 18 inches of topsoil.

37 All seeding and planting areas shall be weed free prior to application of soil
38 amendment, topsoil, and compost.

All planting areas shall be treated with an approved non-selective, non-residual, herbicide a minimum of 14 Calendar Days prior to planting. Undesirable vegetation in interplanted areas shall also be treated a minimum of 14 Calendar Days prior to planting. Planting shall not occur until all existing undesirable vegetation is dead.

For areas with reed canary grass, non-native knotweed, or non-native blackberry, a second application of herbicide is required after a minimum of 42 Calendar Days or when remaining weeds have regrown to a height of 6 to 12 inches, whichever is earlier.

For reed canary grass, herbicide applications shall be made between the months of April and September. For knotweed and blackberry, herbicide applications shall occur no earlier than June 15. The Design-Builder shall not cut live non-native knotweed under any circumstances.

All emergent and aquatic planting shall occur between May 15 and July 15.

2.15.4.13.1 Topsoil

All topsoil shall contain a minimum of 10 percent organic matter in accordance with *AASHTO T267 Determination of Organic Content in Soils by Loss on Ignition*.

For Topsoil Type B, all non-native vegetation shall be chemically treated with a non-selective, non-residual herbicide. Once dead, top growth shall be removed from Topsoil Type B borrow areas prior to excavation.

For planting areas, sub-soil preparation for topsoil shall include cultivating the underlying soil to a depth of 12 inches, followed by a uniform placement of 12 inches of topsoil. Topsoil shall be placed in two non-compacted lifts. The first 6-inch lift shall be placed over existing soil and incorporated to a 10-inch depth. The second 6-inch lift of topsoil shall be placed over the existing incorporated soil to the finished grades shown in the Plans.

2.15.4.13.2 Planting Area Soil Preparation

Soil preparation for planting areas where topsoil is not being placed shall include decompaction to a depth of 12 inches in accordance with this Section, followed by a uniform placement of compost to a 4-inch non-compacted depth and incorporating compost into existing soils to a 10-inch depth.

Soil preparation for planting areas on slopes 2H:1V and steeper shall include the use of bioengineering techniques to stabilize loose surface material.

2.15.4.13.3 Seeded Area Soil Preparation

Soil preparation for seeded areas shall include decompaction to a depth of 10 inches in accordance with this Section, followed by a uniform placement of compost to a 2-inch non-compacted depth.

2.15.4.13.4 Bark or Wood Chip Mulch

All planting areas shall be covered with a 3-inch layer of bark or wood chip mulch evenly applied to the entire area except where emergents and aquatics are to be planted.

Full-coverage bark or wood chip mulch shall not be placed below designed flood storage elevations, ordinary high-water elevations, or wetland reconnaissance boundary elevations. The Design-Builder shall provide erosion control measures made of natural plant fibers unaltered by synthetic materials below the designed flood storage, ordinary high water, or invert elevations.

Trees and shrubs planted in seeded areas or interplanted among existing vegetation shall receive bark or wood chip mulch rings placed in a 2-foot radius to a depth of 3 inches around each individual tree and shrub. Bark shall not contact the stems of trees and shrubs. During the Landscaping Warranty Period, no vegetation will be allowed within any bark or wood chip mulch area other than the trees and shrubs installed as part of the Project. If native plants seed into planting areas, upon request to and approval by the WSDOT Engineer, they may be allowed to remain.

2.15.4.13.5 Gravel, River Rock, and Boulders

The Design-Builder shall incorporate rock and boulders into the landscape, particularly under bridges, where plantings would not be exposed to sunlight or rainfall. The Design-Builder shall use these materials in combination with plant materials and grasses to minimize the overall water demands of the Project. Gravel shall only be used if approved by the WSDOT Engineer.

The gravel, river rock, and boulders shall be typical of the Pacific Northwest region and placed in a manner that promotes the character of the existing natural environment. Rocks shall vary in color from grays to tans. If rocks and boulders are used, the clear zone requirements shall be adhered to in accordance with the WSDOT *Design Manual*.

2.15.5 Construction Criteria

If construction activities impact vegetation, the Design-Builder shall promptly and properly restore the landscape according to the requirements of this Section.

2.15.5.1 Plant Establishment

The plant establishment period shall be 3 years for the Project and shall be in accordance with Article 10 of the PDB Contract.

During the plant establishment period, the WSDOT Engineer will meet with the Design-Builder's representative monthly for the first year, and as needed and quarterly for the remainder of the contract, to Review and Comment on the completed landscape installation and activities necessary for plant establishment. Plant material health, watering, weed and pest control, pruning, erosion control, mulching, plant replacement, litter control, and other maintenance concerns will

be specifically identified, noted, and designated for the Design-Builder to correct during the plant establishment period.

The Design-Builder shall perform the plant establishment activities listed below:

- Watering – Water all planting areas and replacement plants during the first year after installation. At a minimum, provide 2 inches of water, including precipitation, to planting areas once every 14 Calendar Days from June 1 through September 15. Apply water at a rate that does not allow runoff to occur. Submit a plan for temporary watering methods and frequency to WSDOT for Review and Comment. If a temporary irrigation system is proposed, submit a watering schedule.
- Emergent and Aquatic Vegetation – Maintain sufficient water in the soils to support vegetation. At a minimum, soils shall be completely saturated; at a maximum, there shall be a water depth of $\frac{1}{3}$ the height of the vegetation during the growing season.
- Stormwater Vegetation – Implement a Water Management Plan to ensure survival of vegetation in accordance with the WSDOT *Highway Runoff Manual*. Ensure an adequate supply of water is present for a minimum of 10 months of the year to ensure survival of emergent vegetation in accordance with the WSDOT *Highway Runoff Manual*.
- Mulching – Maintain a 3-inch layer of mulch in a weed free condition over all planting areas during the plant establishment period
- Pruning – Pruning of plant material shall be restricted to the removal of damaged branches on trees and shrubs to prevent injury or disease. Pruning shall be done in such a way that the natural habit of growth is maintained. No unnatural pruning or hedging will be permitted.
- Erosion Control – Repair eroded areas and replace mulch as needed to prevent continued erosion
- Weed Control – Maintain planting, bioengineering, and streambed areas in a weed free condition at all times, in accordance with Section 8-02.3(13) in the Standard Specifications and Special Provisions. The Contractor shall complete and use a Weed and Pest Control Plan in accordance with Standard Specifications, Section 8-02. Weed and pest control operations shall be performed according to the Mandatory Requirements
- Litter Control – Remove litter and debris from all planting and seeding areas on a monthly basis
- Use adaptive management of mitigation and roadside restoration planting areas. If at any time Site or hydrologic conditions change, adjust plant communities and species to meet the requirements in this Section.

2.15.5.2 Roadside Restoration and Mitigation Standards

The Design-Builder shall meet the following requirements for roadside restoration:

- First, second, and third years after planting:
 - 100 percent of the plants are alive, healthy, and vigorously growing as determined by WSDOT. All dead, dying, or unhealthy plants are replaced. At the end of the first year of plant establishment, if more than 20 percent of plants are not healthy and vigorous, as determined by WSDOT, the plant establishment period will be extended to include an additional year.
 - Planting and seeded areas are free of weeds and litter.
 - Seeded areas have a dense and healthy stand of the seeded species, free of noxious or undesirable species as defined by Section 8.02.3(3) of the Standard Specifications and the Special Provisions. Vegetative coverage shall be a minimum of 95 percent by visual inspection.

The Design-Builder shall meet the following requirements for all mitigation areas:

- All years of plant establishment:
 - 100 percent of the plants are alive, healthy, and vigorously growing as determined by WSDOT. All dead, dying, or unhealthy plants are replaced.
 - Planting and seeded areas are free of weeds and litter
 - Seeded areas have a dense and healthy stand of the seeded species, free of noxious or undesirable species as defined by Section 8.02.3(3) of the Standard Specifications and the Special Provisions. Vegetative coverage shall be a minimum of 95 percent by visual inspection.
 - Meet all criteria specified in TR Sections 2.8, *Environmental*, 2.14, *Hydraulics*, and 2.30, *Fish Passage* pertaining to mitigation restoration

2.15.5.3 Landscaping Warranty

The Design-Builder shall provide Landscaping Warranties covering all on-site stream and wetland mitigation, roadside restoration, and plant establishment requirements described in this Section, TR Sections 2.8, *Environmental*, TR Section 2.14, *Hydraulics*, TR Section 2.30, *Fish Passage*, and the *Environmental Commitments List*. At any time during the applicable Landscaping Warranty Period, if WSDOT determines that any of the on-site stream or wetland mitigation, roadside restoration, or other landscaping Work has not met the standards set forth in the PDB Contract, the Design-Builder shall correct the Work, even if the performance of such correction extends beyond the stated Landscaping Warranty Period.

2.15.5.4 Architectural Treatments

The Design-Builder shall monitor the appearance of the architectural treatments on walls and structures for any defects, flaws, or vandalism during the construction and until Physical Completion. Refer to TR Section 2.29, *Maintenance During Construction*, relating to maintenance and appearance of architectural treatments. The Design-Builder shall note the defects, flaws, or

vandalism, and promptly notify WSDOT. The Design-Builder shall remedy defects, flaws, and vandalism until Physical Completion. See the *General Provisions* (Appendix 4) for warranty requirements.

2.15.6 Submittals

2.15.6.1 Preliminary Submittals

The Design-Builder shall submit preliminary plans as described in this Section to WSDOT for Review and Comment as part of the Preliminary Design Submittal described in TR Section 2.28, *Quality Management Plan*.

Preliminary Documentation

- Environmental Sensitive Area locations and Impact Area Line as identified by the permits.
- Vegetation Removal and Soil Impact documentation must be submitted prior to clearing and grubbing.

Preliminary Design Submittals include, at a minimum, the following:

- Preliminary plans and details of architectural features, including an Architectural Key Plan that indicates the extent of proposed treatments and finishes of retaining walls, piers, barriers, fencing, lighting, cabinets, and railings.
- Preliminary Landscape Planting Plans that shall include the following:
 - Sensitive Areas
 - Vegetation Protection Plans
 - Vegetation Replacement documentation
 - Impact Area Line
 - Clear zone and sight distance
 - Locations of existing and new ITS, illumination, and signing
 - Roadside Restoration Plans
 - Mitigation Area Plans
 - Remedial landscape areas
 - Planting details including soil preparation and mulching
 - If a Constructed Stormwater Treatment Wetland or detention pond is proposed, a preliminary layout of the pond, including preliminary contour grading and planting

2.15.6.2 Final Design Submittal

The Design-Builder shall prepare plan sheets in accordance with the WSDOT *Plans Preparation Manual*. A Licensed Landscape Architect shall affix their

original signature, date of signature, original seal, license number, and date of expiration to each plan sheet.

Final Design Submittals include, at a minimum, the following:

- Final Plans and details of aesthetic features
- Cut sheets of the selected form liner(s) for wall treatments
- Final Temporary Watering Plans
- Final Landscape Planting Plans, planting details, and Technical Specifications

Planting Plans shall include the following criteria:

- The plans shall be developed in accordance with this Section.
- The Plans shall identify and show all natural features such as watercourses, bodies of water, stands of trees, and existing vegetation and resource conservation areas to be preserved and protected.
- The Plans shall indicate the type, quantity, size, spacing, root condition, and location of all plantings. Each planting plan sheet shall include the square footage of each planting area, the quantities of each species for each planting area, and a summary plant material list with the details.
- Planting details

2.15.6.3 Project Submittals During Construction

Project submittals shall include, at a minimum, the following:

- Roadside Work Plan
- Weed and Pest Control Plan
- Landscaping Warranty Plans; including a Water Management Plan for all emergent vegetation
- Form Liner – The form liner for this Project shall be selected from the QPL or shall be approved by the WSDOT Engineer as an equal product. If the form liner is not in the current QPL, the Design-Builder shall submit a request to the WSDOT Engineer to use the material. In addition, the Design-Builder shall submit catalog cuts and other descriptive supporting information, and a 2-foot square physical sample.
- Certified lab analysis for fine compost and topsoil

2.15.6.4 Miscellaneous Submittals

At the request of the WSDOT Engineer, the Design-Builder shall deliver to the WSDOT Engineer Work-related submittals that do not fit in the previous categories but are prepared in accordance with this Section.

End of Section